

ABSTRACT

A software implementation of a Reed-Solomon decoder placing a constant load on the processor of a computer. A Berlekamp-Massey Algorithm is used to calculate the coefficients of the error locator polynomial, a Chien Search is used to determine the roots of the error locator polynomial, and a Forney Algorithm is used to determine the magnitude of the errors in the received digital code word. Each step is divided into m small tasks where m is the number of computational blocks it takes to read in a code word and the processor can pipeline or parallel process one task from each step each time a block is read.